

REMARKS

Claims 1-19 continue to be the pending claims in the application. Claims 1 and 16 have been amended. Support for these amendments is found throughout the specification and specifically at paragraphs [0019], [0020], [0030] and [0036]. Reconsideration of the application in light of the remarks which follow is respectfully requested.

The instant application is a continuation-in-part of Application Serial No. 09/955,395, filed on September 18, 2001, which issued as U.S. Patent No. 6,858,550 (the "Ahluwalia '550 patent") on February 22, 2005, a copy of which is attached. The Examiner of the present application also examined the Ahluwalia '550 patent application. Claim 1 of the '550 patent is as follows:

1. A fire resistant fabric material comprising a substrate having an ionic charge coated with a coating having essentially the same ionic charge,  
wherein said coating consists essentially of a filler material comprising clay and a binder material,  
wherein said binder material bonds the filler material together and to the substrate,  
wherein said coating does not bleed through said substrate, and  
wherein said fire resistant fabric material is drunable [sic] and has a porosity of between 5 and 50 cfm.

Ahluwalia U.S. Patent No. 5,965,257 ("Ahluwalia '257") is listed as a cited reference on the first page of the '550 patent. Ahluwalia '257 did not render the Ahluwalia '550 claims unpatentable and it should also not bar patentability of the instant claims.

The Examiner asserts that Ahluwalia '257 "discloses that it is well known to include clay as a filler material in structural articles in the building industry." As detailed below, Ahluwalia '257 provides only an acknowledgment that clay had been used to fill the interstices between fibers in structural article sheets, not that clay could be used in coatings that did not bleed through such sheets.

In the BACKGROUND OF THE INVENTION in column 1 in Ahluwalia '257, there is a summary of prior art laminates made with facing sheets. It is noted that the laminates described in U.S. Patent No. 5,001,005 ("Blanpied") include thermosetting plastic foam and have planar facing sheets comprising glass fibers (exclusive of glass micro-fibers), non-glass filler material and non-asphaltic binder material. Col. 1, lines 17-21. Clay is one of the listed filler materials "that are bonded to the glass fibers using binders."

The Blanpied patent relates to laminates and foam filled panel products. Col. 1, lines 7-8. In particular, Blanpied describes facer sheets for foamed core panels. *Id.*, lines 14-17. Prior art glass fiber sheets having a high porosity had been filled with "micro-fibers" and "fibrous glass dust" to decrease the porosity of the facer and contain the thermosetting plastic foams. *Id.*, lines 37-46. However, "micro-fibers" came to be regarded as hazardous to human safety. *Id.* lines 55-57. An asserted advantage of the Blanpied patent was the provision of facers which lack micro-fibers. Col. 2, lines 10-12.

The facing sheets described in the Blanpied patent include from 60% to 90% by weight glass fibers, exclusive of glass micro fibers; from 10% to 40% by weight non-glass filler material and from 1% to 30% by weight non-asphaltic binder. The filler may be clay. *Id.*, lines 36-43. The clay fills spaces in the glass fiber facing sheet. Col. 1, lines 41-46. A coating is mentioned only in Facer Example No. 3, and there it is indicated that a thermoplastic polymer latex is mixed with clay or another filler and with water and a water thickener. There is no suggestion that the coating does not bleed through the mat. Indeed, the example states that the coating "reduces the porosity of shingle mat to the extent it can be used as a facer for thermosetting plastic foam boards." Col. 3, lines 66-68. Thus, the Ahluwalia '257 reference to the '005 patent and to clay provided no indication that clay could be utilized in a zero bleed through coating.

The Blanpied patent also notes the possible utilization of aluminum foil elements. It is stated that structural laminates employing only the Blanpied facer may feature on the opposite side of the core prior art facers such as aluminum foil. The instant claims recite “a metallic component adhered to the coated substrate”. The Blanpied patent does not describe a metal component adhered to a coated substrate.

The invention described in Ahluwalia ‘257 is “a structural article made by coating a substrate having an ionic charge with a coating having essentially the same ionic charge. The coating consists essentially of a filler material and a binder material.” Col. 1, line 66 to col. 2, line 3. The filler is selected from the group consisting of fly ash, charged calcium carbonate, ceramic microspheres and mixtures thereof. Abstract, col. 2, line 21 to col. 3, line 4. The coating does not bleed through the substrate. Col. 2, lines 3 to 8. Nothing in Ahluwalia ‘257 indicates that clay may be included among filler components to produce a coating that has essentially the same ionic charge as the substrate and thus not bleed through that substrate. Indeed, Ahluwalia distinguished his described and claimed invention from prior art laminates that featured clay as a filler in the construction of planar facing sheets. The Ahluwalia ‘257 patent issued on October 12, 1999.

On September 18, 2001, Ahluwalia filed the application which issued as the ‘550 patent. In that application, it was noted that the products of Ahluwalia ‘257

are unable to provide a satisfactory fabric material because they lack adequate drapability characteristics. The applicant has discovered, however, that by including clay as a filler component in the coating of the article, a fire resistant fabric material may be produced which has satisfactory flexibility, pliability and drapability characteristics.

Ahluwalia ‘550, col. 2, lines 36-42. Thus, nearly two years after the issuance of the ‘257 patent, Ahluwalia continued to distinguish the invention disclosed therein from products which included clay as a filler component.

The present invention, like that claimed in its ancestor Ahluwalia '550 patent, includes a coated substrate wherein the "coating consists essentially of a filler material comprising clay and a binder material." See '550 claim 1 and instant claim 1. In both instances the "coating does not bleed through said substrate." *Id.* The patented Ahluwalia '550 claims cover fire resistant materials that are "drapable" and that have "a porosity of between 5 and 50 cfm." The instant claims are directed to a heat insulating and fire resistant composite material that comprises the aforementioned coated substrate and a metallic component adhered thereto. The coating consists essentially of a filler material comprising clay and a binder material which bonds the filler together and to the substrate, and wherein the coating does not bleed through the substrate. Nothing in Ahluwalia '257 suggests such a composite material. Indeed, the instant application states in paragraph 0014 that the "present invention is based in part on the unexpected discovery that the inclusion of a metallic component on the fire resistant fabric materials of U.S. Patent Application 09/955,395 [Ahluwalia '550] surprisingly results in a composite material with superior heat insulating properties and fire resistant properties that is still flexible."

The Examiner's attention is invited to two other of the instant application assignee's patents: U.S. Patent Nos. 6,586,353 to Kiik, Bryson, Tobin and Ahluwalia ("Kiik '353") and 6,673,432 to Kiik, La Vietes and Ahluwalia ("Kiik '432"), copies of which are attached. Kiik '353 is an ancestor to the present application and to Kiik '432.

Kiik '353 discloses a roofing underlayment system that comprises at least one layer of felt material and at least one layer of the coated structural article of Ahluwalia '257. Kiik '432 discloses a structural article comprising a substrate having an ionic charge coated on one side with the coating of Ahluwalia '257 and covered on the other side with a water vapor impermeable coating comprising a material selected from the group consisting of metal foils and preformed plastic films. Both Kiik '353 and Kiik '432 describe the filler component of

the Ahluwalia '257 coating as a filler selected from the group consisting of fly ash, charged calcium carbonate, ceramic microspheres and mixtures thereof. Neither Kiik '353 nor Kiik '432 indicates that clay may be included among the filler components and produce a coating that "does not bleed through" the substrate.

After discussing Ahluwalia '257 in the Office Action, the Examiner concluded that it "discloses the claimed invention except for the teaching that the metallic component is adhered to the coated substrate." Essential to that conclusion was the Examiner's prior statement that Ahluwalia '257 "further discloses that it is well known to include clay as a filler material in structural articles in the building industry." But Ahluwalia '257 did not indicate that clay could be included in a coating that "does not bleed through" a substrate. Indeed, Ahluwalia '257 describes prior art, and then notes

Many different coating compositions have been formulated over the years but often such compositions would bleed through substrates, such as fiberglass substrates, if the substrates were coated on just one side, unless the compositions had a high binder content and/or included viscosity modifiers to enhance the viscosity of the coating composition. To prevent bleed through, such coating compositions sometimes had their viscosity increased by blowing or shipping air into the compositions. Although such blown compositions did not bleed through to the other side of mats such as fiberglass mates, the raw material costs for the compositions were high because of the numbers of constituent elements involved.

Accordingly, it is an object of this invention to provide a structural article having a coating which includes only two major constituents, while eliminating the need for viscosity modifiers, for stabilizers or for blowing. It is also an object of this invention to provide a low cost, relatively light weight structural article comprised principally of a coating having a low binder content and a high filler content. It is a further object of this invention to provide a relatively light weight, low cost coating which coats a substrate without bleeding through the substrate.

Col. 1, lines 42 to 53. Ahluwalia '257 specifies that the filler component of the inventive zero bleed through coating is selected from the group consisting of fly ash, charged calcium carbonate, ceramic microspheres and mixtures thereof. Clay is not included in that group.

The rejection is also based on Langer U.S. Patent No. 4,600,634 which discloses sheet material comprising an inorganic fiber, such as fiberglass; a binder, such as acrylic resin; and an inorganic endothermic filler, such as alumina trihydrate. Abstract. The "endothermic filler occupies the interstices between the fibers." Col. 4, lines 2-3. Clay is not listed among the fillers, but it is mentioned as an inorganic binder, on which the Langer "compositions do not rely." Col. 2, lines 53-54. Alternative embodiments feature the addition of a backing to the sheet material to "give added strength." *Id.*, lines 8-27. The backing materials may be aluminum foil or fabric scrim. *Id.*

The Examiner contends that it "would have been obvious to one having ordinary skill in the art to have added Langer's aluminum sheet to one or both sides of the coated substrate of Ahluwalia, motivated by the desire to create a structural article with increased strength and durability." The Applicants respectfully submit that, whether it would have been obvious to add Langer's aluminum sheet to the coated substrate of Ahluwalia '457 is irrelevant to the issue of patentability of the instant claimed invention. In the present invention, the metallic component is adhered to the coated substrate of Ahluwalia '550 (a priority document of this application) not the coated substrate of Ahluwalia '457. As noted above, the Ahluwalia '457 coated substrate does not include clay among the coating components which do not bleed through the substrate. Indeed, Ahluwalia '457 distinguishes the inventive products described therein from prior art Blanpied facers which include clay to decrease the porosity in glass fiber sheets. Langer also employs filler, but not clay, to occupy "the interstices between fibers". Langer teaches that clay is not useful as a binder component.

Paragraphs 0049 and 0050 provide a comparison of the present invention and the Ahluwalia '257 coated substrate with aluminum foil adhered thereto. Note that a cotton ball was placed on top of both products and that the flame of a Bunsen Burner was placed two inches below them. The "cotton ball burned after 14 minutes when placed on top of a composite material comprised of aluminum foil and the structural article of U.S. Patent No. 5,965,257" but "the cotton ball did not burn even after 8.5 hours when placed on top of the composite material of the present invention which includes aluminum foil." Thus there are real and consequential differences between the coated substrates of Ahluwalia '257 and Ahluwalia '550, and only the latter is included as an element in the instant claims.

The Examiner's attention is invited to the USPTO Examination Guidelines for Determining Obviousness, effective October 10, 2007. 72 Fed. Reg. 57,529 provides, *inter alia*, "Note that combining known prior art elements is not sufficient to render the claimed invention obvious if the results would not have been predictable to one of ordinary skill in the art." Nothing in Blanpied, Ahluwalia '257 or Langer suggests that inclusion of clay among filler components produces a coating that does not bleed through a substrate and results in a product having superior heat insulating and fire resistant characteristics. Blanpied and Langer teach the utilization of filler to occupy the interstices between fibers to decrease the porosity of glass fiber sheets. Blanpied discloses clay as one such filler and Langer excludes its use as a binder. Regarding clay, Ahluwalia only summarizes the teaching of Blanpied, but does not in any way indicate that clay may be utilized in a zero bleed through coating.

### **Conclusion**

Based on the foregoing, it is clear that there are significant, real world differences between the Ahluwalia '257 coated substrate and the coated substrate employed in the present invention. Accordingly, allowance of the claims is earnestly solicited. Please send

Attorney Docket No. 03398.000004

any further correspondence relating to this application to the undersigned attorney at the address below.

Applicants believe no fee is due in connection with this communication.

However, should any fee be due in connection with this communication, the Commissioner is authorized to charge any such fee to Deposit Account No. 06-1205.

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Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our address given below.

Respectfully submitted,

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